

Bill of Quantities

Project: CETB Biomass – Heating Upgrade Works	Details: Mechanical
Building: Glanmire Community College	

Auto code	Description	Quantity	Unit	Rate	Total
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(00) EXTERNAL WORKS

	ENERGY CABIN CIVIL & SITE WORKS				
	<u>BUILDERS WORK</u>				
1	The works include, but are not limited to, site preparation, excavation, concrete foundations, service ducting, drainage works, hardstanding areas, access routes, reinstatement works, and all associated ancillary civil works required to facilitate the complete installation and operation of the Energy Cabin and associated infrastructure.		Note		
	<u>The Contractor shall allow for all labour, supervision, plant, materials, temporary works, traffic and pedestrian management, testing, commissioning support, and compliance with all relevant statutory requirements, specifications, drawings, and health and safety regulations necessary for the proper execution and completion of the works.</u>				
2	Reinforced concrete foundation slab, including excavation, formwork, reinforcement and finishing to required tolerances	55.00	m2		
3	Trenching for underground services, including excavation, bedding, backfill and reinstatement	1.00	item		
4	Underground primary LPHW flow and return pipe stubs terminated at cabin location	1.00	item		
5	Plinths, hardstanding and access provisions	1.00	item		
	Other Items				
6	Provide for all labour, materials, plant and all items which in the tenderers opinion are not specifically allowed for in this section of the works but which can be reasonably inferred from the works requirements as being necessary for the execution and completion of the works. – (List items below)	1.00	item		
7		1.00	item		
8		1.00	item		
9		1.00	item		
10		1.00	item		
11		1.00	item		
12		1.00	item		
13		1.00	item		
14		1.00	item		

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(51) HEATING CENTRE

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	<u>ALTERNATIVE RULES FOR THE MEASUREMENT OF MECHANICAL INSTALLATION</u>				
	<u>INFORMATION REQUIRED</u>				
1	1. Minimum information which must be shown on the drawings that accompany this section – scope and location of work.				
2	2. Information which must accompany this section – relevant drawings and specifications.				
3	3. Mandatory information to be provided – detailed description of the system giving specified output requirements.				
4	4. The tenderer is referred to the Mechanical Services Drawings, Mechanical Equipment Schedules and Mechanical Specification accompanying this Pricing Document.				
	<u>GENERALLY</u>				
5	1. The contractor shall note that this section is measured in accordance with the ARM4 Supplement 2 – Agreed Alternative Rules for the Measurement of Services Installations.				
6	2. The tenderer is referred to the Mechanical Services Drawings and Mechanical Specification accompanying this Pricing Document description of materials and workmanship other than those described hereafter.				
7	3. The tenderer is referred to the Works Requirements accompanying this Pricing Document.				
8	4. For preliminary particulars, please refer to tender documentation				
9	5. Plan, sections and details as shown on the Works Requirements Documents.				
10	6. Specification: Refer to Mechanical Services Work Requirements				
	<u>HEATING PLANTROOM UPGRADE</u>				
11	Mechanical Plant Installation;				
12	Include for upgrade works in each existing school plantroom, including the supply and installation of, secondary header pumps, low-loss headers, three-port modulating mixing valves, pressurisation units, expansion vessels, chemical dosing pots, dirt/air separators, strainers, valves, instrumentation and BMS outstations to provide fully modulating circulation and controllable flow temperature; as per Mechanical Services Drawings and Heating Upgrade – Mechanical Specification				
	<u>Primary Equipment:</u>				
	<u>Pumps</u>				
13	Secondary header pumps, variable speed inline type, duty and standby arrangement				
14	Flexible connectors to pumps	1.00	item		
15	Anti-vibration mounts and inertia bases to pumps	1.00	item		
16	Block B Plantroom; VSD P1; Biomass Recirculation Pump	1.00	Nr		
17	Block B Plantroom; VSD P2; NG Boiler Recirculation Pump	1.00	Nr		
18	Block C Plantroom; VSD P3; Biomass Recirculation Pump	1.00	Nr		
	<u>Hydraulic Separation Equipment</u>				
19	Low-loss headers, fabricated steel	1.00	item		

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(51) HEATING CENTRE (Continued)

20	Thermal insulation to low-loss headers	1.00	item		
21	Supports and brackets to low-loss headers	4.00	Nr		
	Valves & Controls				
	<u>Block B Plantroom</u>				
22	Biomass Flow to LLH; Ball Valve	2.00	Nr		
23	Biomass Flow to LLH; Non Return Valve	1.00	Nr		
24	LLH Return to Biomass; Ball Valve	4.00	Nr		
25	LLH Return to Biomass; Non Return Valve	1.00	Nr		
26	Biomass Flow to LLH; Fixed Orifice Double Regulating Valve	1.00	Nr		
27	NG Boiler Flow to LLH; Gate Valve	1.00	Nr		
28	LLH Return to NG Boiler; Gate Valve	3.00	Nr		
29	LLH Flow to Distribution System; Gate Valve	1.00	Nr		
30	Distribution System Return to LLH; Gate Valve	3.00	Nr		
	<u>Block C Plantroom</u>				
31	Biomass Flow to LLH; Ball Valve	2.00	Nr		
32	Biomass Flow to LLH; Non Return Valve	1.00	Nr		
33	LLH Return to Biomass; Ball Valve	4.00	Nr		
34	LLH Return to Biomass; Non Return Valve	1.00	Nr		
35	Biomass Flow to LLH; Fixed Orifice Double Regulating Valve	1.00	Nr		
36	NG Boiler Flow to LLH; Gate Valve	1.00	Nr		
37	LLH Return to NG Boiler; Gate Valve	1.00	Nr		
38	LLH Flow to Distribution System; Gate Valve	1.00	Nr		
39	Distribution System Return to LLH; Gate Valve	3.00	Nr		
	Pressurisation & Water Treatment				
40	Combined dirt separators	1.00	Nr		
41	Side stream filtration units	1.00	Nr		
42	Isolation valves 3" – 330 l/min	4.00	Nr		
	<u>Block B Plantroom</u>				
43	Particle Filter	1.00	Nr		
44	Magnetic Filter	1.00	Nr		
45	Low Loss Header	1.00	Nr		
46	Chemical dosing pots	1.00	Nr		
	<u>Block C Plantroom</u>				
47	Particle Filter	1.00	Nr		
48	Magnetic Filter	1.00	Nr		
49	Low Loss Header	1.00	Nr		

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(51) HEATING CENTRE

(Continued)

50	Chemical dosing pots	1.00	Nr		
	Instrumentation & BMS				
	<u>Plantroom B</u>				
51	Temperature Sensors; 0– 10 Barg; Direct Mounted Probe; Threaded, G 1/2	6.00	Nr		
52	Temperature Indicators; 0– 10 Barg; Direct Mounted Probe; Threaded, G 1/2	6.00	Nr		
53	Pressure Indicators; 0– 10 Barg; Direct Mounted Probe; Threaded, G 1/2	6.00	Nr		
54	Heat Meter; Inline Ultrasonic with temperature sensors connecting flow and return line.	1.00	Nr		
	<u>Plantroom C</u>				
55	Temperature Sensors; 0– 10 Barg; Direct Mounted Probe; Threaded, G 1/2	6.00	Nr		
56	Temperature Indicators; 0– 10 Barg; Direct Mounted Probe; Threaded, G 1/2	4.00	Nr		
57	Pressure Indicators; 0– 10 Barg; Direct Mounted Probe; Threaded, G 1/2	4.00	Nr		
58	Heat Meter; Inline Ultrasonic with temperature sensors connecting flow and return line.	1.00	Nr		
	<u>Outside Biomass Cabin</u>				
59	Heat Meter; Inline Ultrasonic with temperature sensors connecting flow and return line.	1.00	Nr		
	EXISTING GAS BOILER RETENTION				
60	Modify existing gas boiler pipework connections	1.00	item		
61	Reconnect retained gas boilers	1.00	item		
62	Registered Gas Installer (RGI) works	1.00	item		
63	Gas soundness testing and certification	1.00	item		
64	Control interlock between gas boilers and biomass system	1.00	item		
65	BMS integration of retained boilers	1.00	item		
66	Recommission retained gas boilers	1.00	item		
	PRIMARY & SECONDARY LPHW PIPEWORK				
67	Supply & Install Steel pipework, black, screwed/welded, for LPHW systems, including fittings, jointing, supports, hangers, anchors, guides, testing and commissioning, complete; all in accordance with the Engineer's Specifications & Drawings and Manufacturer's Instructions.				
68	Pipework				
69	pipework generally externally	1.00	Item		
70	pipework generally internally	1.00	Item		
	<u>INSULATION</u>				
71	Pre-insulated buried LPHW pipework, including trenching, bedding, backfill, warning tape and testing				
72	Pipework				
73	Pre insulation	1.00	Item		
74	DN50/125 insulation class	1.00	Item		
75	DN80/160 insulation class	1.00	Item		

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(51) HEATING CENTRE

(Continued)

76	DN100/200 insulation class	1.00	Item		
77	Thermal insulation to pipework, mineral fibre with aluminium cladding, including valves and fittings				
78	Pipework				
79	insulation	1.00	Item		
	<u>Pipework Accessories</u>				
80	Isolation valves	1.00	Item		
81	Balancing valves	1.00	Item		
82	Motorised control valves	1.00	Item		
83	Air vents	1.00	Item		
84	Drain valves	1.00	Item		
85	Pipeline identification labels	1.00	Item		
	<u>GENERAL</u>				
86	General services installations; Complete all as per Fingleton White drawings, schedules and specifications and installed in accordance with the Manufacturer's Instructions.				
87	Heating Installations;				
88	operating and Maintenance manuals	1.00	item		
89	working drawings	1.00	item		
90	co-ordinated drawings	1.00	item		
91	as built drawings	1.00	item		
92	marking the positions of holes, mortice's and chases	1.00	item		
93	identification plates and labels	1.00	item		
94	builders works	1.00	item		
95	firestopping and other associated fire protection work	1.00	item		
96	protection and secure storage of all LPG plant and equipment prior to installation	1.00	item		
	<u>M&V Metering</u>				
97	Measurement and verification (M&V) metering installation				
98	Heat meters, ultrasonic type, complete with sensors and integrator	2.00	Nr		
99	Flow meters	1.00	Item		
100	Data logging and reporting interface	1.00	Item		
	<u>Painting & Decorating</u>				
	<u>PAINTING</u>				
101	Paint to all gas pipework; include for 1 no. Zinc phosphate primer and an overcoat in yellow Ochre Ral 1024 paint; all paint to be neat, drip and ripple free, and suitable for the temperature of pipe which it is applied to; application in accordance with the manufacturers instructions; all in accordance with M&E engineer's drawings and specification				
102	Pipework				

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(51) HEATING CENTRE

(Continued)

103	pipework generally	1.00	item		
104	Paint to un-insulated- visible heating pipework; include for 1 no. Zinc phosphate primer and an overcoat; all paint to be neat, drip and ripple free, and suitable for the temperature of pipe which it is applied to; application in accordance with the manufacturers instructions; all in accordance with M&E engineer's drawings and specification				
105	Pipework				
106	pipework generally	1.00	item		
107	Paint to insulated heating pipework; include for 1 no. Zinc phosphate primer; all paint to be neat, drip and ripple free, and suitable for the temperature of pipe which it is applied to; Recoat fittings and welds with four weeks of installation; application in accordance with the manufacturers instructions; all in accordance with M&E engineer's drawings and specification				
108	Pipework				
109	pipework generally	1.00	item		
	Testing & Commissioning				
110	All testing, commissioning, and handover documentation; all in accordance with the Engineer's Specifications & Drawings and Manufacturer's Instructions.				
111	Pressure testing of pipework systems	1.00	Item		
112	Flushing and chemical cleaning of systems	1.00	Item		
113	Balancing of LPHW systems	1.00	Item		
114	Commissioning of plant and controls	1.00	Item		
115	Provision of O&M manuals and training	1.00	Item		
	Other Items				
116	Provide for all labour, materials, plant and all items which in the tenderers opinion are not specifically allowed for in this section of the works but which can be reasonably inferred from the works requirements as being necessary for the execution and completion of the works. – (List items below)		item		
117		1	item		
118		1	item		
119		1	item		
120		1	item		
121		1	item		
122		1	item		
123		1	item		
124		1	item		

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(51) HEATING CENTRE

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M&E BUILDERS WORK

	INSPECTION, TESTING, COMMISSIONING & HANDOVER				
	The Contractor is referred to the M&E Drawings packages, M&E Particular Specification and M&E Builders Works Schedule for details.				
1	General items to be allowed for in accordance with Mechanical Particular Specification.	1.00	item		
2	General items to be allowed for in accordance with Electrical Particular Specification.	1.00	item		
3	Form service penetrations through walls and floors	1.00	item		
4	Fire stopping to penetrations through fire-rated construction	1.00	item		
5	Electrical containment within plantrooms (mechanical scope)	1.00	item		
6	Making good and reinstatement of disturbed building fabric	1.00	item		

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Report Summary

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